

In the Claims

Please amend claims 1 and 18 as follows. Additionally, the current status for all of the claims is provided.

1. (Currently Amended) A method for annealing a semiconductor structure, the method comprising,

after implanting a dopant into the semiconductor structure, subjecting the semiconductor structure to an oscillating magnetic electromagnetic field to induce current flow through the semiconductor structure so that ohmic collisions occur between high energy electrons and the lattice structure of the semiconductor wafer for rapidly heating from within the lattice structure of the semiconductor wafer, and,

applying a low temperature rapid thermal annealing (LTRTA) process to the semiconductor structure to further repair the lattice structure and minimize diffusion of the dopant.

2. (Original) A method according to claim 1, wherein subjecting includes subjecting to a time-varying electromagnetic field.

3. (Previously Presented) A method according to claim 1, wherein subjecting includes providing a frequency in a microwave frequency band.

4. (Previously Presented) A method according to claim 1, wherein subjecting includes providing a frequency in a radio frequency (RF) band.

5. (Original) A method according to claim 1, wherein applying a LTRTA includes exposing the semiconductor to a temperature less than approximately 800 degrees Celsius.

6. (Original) A method according to claim 1, wherein applying a LTRTA includes exposing the semiconductor to a furnace having a temperature greater than approximately 500 degrees Celsius, and less than approximately 800 degrees Celsius.

7. (Original) A method according to claim 1, wherein applying a LTRTA can precede subjecting the semiconductor to an electromagnetic field.

8. (Original) A method according to claim 1, wherein applying a LTRTA includes using a furnace to perform the LTRTA.

9. (Withdrawn) A method for implanting a dopant in a semiconductor structure, the method comprising,

using ion implantation to implant the dopant in the semiconductor,

activating the dopant using electromagnetic induction heating (EMIH),

and,

applying a low-temperature rapid thermal anneal (RTA) process.

10. (Withdrawn) A method according to claim 9, wherein the dopant is at least one of an n-type dopant and a p-type dopant.

11. (Withdrawn) A method according to claim 9, wherein activating the dopant using EMIH includes subjecting the dopant to an oscillating magnetic field.

12. (Withdrawn) A method according to claim 9, wherein activating the dopant includes subjecting the dopant to a time-varying electromagnetic field.

13. (Withdrawn) A method according to claim 9, wherein activating the dopant includes providing at least one of a Radio Frequency (RF) wave and a microwave frequency.

14. (Withdrawn) A method according to claim 9, wherein applying a LTRTA includes exposing the semiconductor to a temperature less than approximately 800 degrees Celsius.

15. (Withdrawn) A method according to claim 9, wherein applying a LTRTA includes exposing the semiconductor to a furnace having a temperature greater than approximately 500 degrees Celsius, and less than approximately 800 degrees Celsius.

16. (Withdrawn) A method according to claim 9, wherein applying a LTRTA can precede activating the dopant.

17. (Withdrawn) A method according to claim 9, wherein applying a LTRTA includes using a furnace to perform the LTRTA.

18. (Currently Amended) A method for processing a semiconductor structure comprising:

(a) subjecting the semiconductor structure to athermal heating to induce current flow through the semiconductor structure so that ohmic collisions occur between high energy electrons and the lattice structure of the semiconductor wafer for rapidly heating from within the lattice structure of the semiconductor wafer; and

(b) applying a low-temperature rapid thermal anneal (LTRTA) process to the semiconductor structure.

19. (Withdrawn) A method according to claim 18, further comprising the step of implanting a dopant into the semiconductor structure by ion implantation before said step (a) and thereafter activating the dopant in said step (a) to implant the dopant into the semiconductor structure.

20. (Previously Presented) A method according to claim 18, further comprising the step of subjecting the semiconductor structure to an oscillating magnetic field to anneal the semiconductor structure.